CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 11 (currently amended). A method for switching a semiconductor circuit breaker, which comprises the steps of:

controlling a resistance of a breaker gap of the semiconductor circuit breaker by a control voltage such that a power loss from the semiconductor circuit breaker does not exceed a predetermined setpoint and allows continuous operation at the predetermined setpoint and regulates the power loss to the predetermined setpoint.

Claim 12 (currently amended). The method according to claim 11, which further comprises determining the power loss of the semiconductor circuit breaker by the steps of:

generating from a ~~differential~~ difference voltage tapped from between connection terminals of the semiconductor circuit breaker, an absolute value of the ~~differential~~ difference voltage in reference to a reference potential;

determining a differential of the absolute value of the ~~differential~~ difference voltage over time;

according to formula:

$$Pist = V_S{*}I_S = Vdiffabs{*}d(Vdiffabs)/dt{*}C1,$$

where

Pist = power loss,

Vdiffabs = the absolute value of the ~~differential~~ difference voltage,

$V_S$ = switch voltage = Vdiffabs,

$I_S$ = d(Vdiffabs)/dt*C1,

C1 = const,

multiplying the differential d(Vdiffabs)/dt over time by the absolute value Vdiffabs and the constant value C1, in which case a product of the semiconductor circuit breaker corresponds to the power loss Pist; and

regulating the power loss to the predetermined setpoint resulting in a controlled variable serving as a control signal for generating the control voltage.

Claim 13 (currently amended). The method according to claim 11, which further comprises:

determining from a ~~differential~~ difference voltage tapped from between connection terminals of the semiconductor circuit breaker, an absolute value of the ~~differential~~ difference voltage in reference to a reference potential;

determining and storing from known or measurable system variables selected from the group consisting of capacity, the absolute value of the ~~differential~~ difference voltage and a constant power of the switch, a time-variable nominal voltage allocated to the constant power of the switch for a process of reversing a charge; and

using the time-variable nominal voltage as a command variable for regulating the absolute value of the ~~differential~~ difference voltage for the process of reversing the charge starting with the absolute value of the ~~differential~~ difference voltage at a start of the process of reversing the charge up to a point in time when the process of reversing the charge has ended and the absolute value of the ~~differential~~ difference voltage = 0V, resulting in a controlled variable serving as a control signal for generating the control voltage.

Claim 14 (currently amended). A semiconductor circuit breaker system disposed between two energy storage devices

in a wiring system of a vehicle equipped with an integrated starter generator, the system comprising:

a circuit breaker embodied as a transfer gate having two semiconductors connected in series and connection terminals, said circuit breaker having an off-state in which at least one of said semiconductors is blocked; and

a charge pump generating a control voltage impressed across a gate terminal and a source terminal of said semiconductors of ~~and connected to~~ said circuit breaker, said charge pump controlling said semiconductors of said circuit breaker, in a conductive state, such that in each case said semiconductors only being controlled to such an extent that a power loss from said circuit breaker does not exceed a predetermined setpoint and allows continuous operation at the predetermined setpoint and regulates the power loss to the predetermined setpoint.

Claim 15 (original). The system according to claim 14, wherein:

said two semiconductors are connected in series and have interconnected gate connections and interconnected source connections;

said transfer gate has a transistor with a collector emitter path disposed between said interconnected gate connections and said interconnected source connections of said two semiconductors connected in series, said transistor can be shifted by an external signal to a conductive state in order to control said transfer gate quickly to a non-conductive state.

Claim 16 (currently amended). The system according to claim 14, wherein for determining the power loss from said circuit breaker, the system further comprising:

a voltage transmitter receiving a ~~differential~~ difference voltage tapped from between said connection terminals of said circuit breaker, said voltage transmitter forming an absolute value of the ~~differential~~ difference voltage in reference to a reference potential from the ~~differential~~ difference voltage;

a differentiator connected to said voltage transmitter and generating a differential value of the absolute value of the ~~differential~~ difference voltage over time; and

a multiplier connected to said differentiator and multiplies the differential value of the absolute value of the ~~differential~~ difference voltage over time by the absolute value of the ~~differential~~ difference voltage and a constant value resulting in an output signal conforming to the power loss of said circuit breaker.

Claim 17 (currently amended). The system according to claim 14, further comprising:

a microcontroller for digitally determining the power loss;

a voltage transmitter receiving a ~~differential~~ difference voltage tapped from between said connection terminals of said circuit breaker, said voltage transmitter forming an absolute value of the ~~differential~~ difference voltage in reference to a reference potential from the ~~differential~~ difference voltage, said voltage transmitter having a differential amplifier outputting an output signal;

an A/D converter which continuously digitizes the output signal of said differential amplifier resulting in a digitalized signal;

an intermediate storage device connected to said A/D converter and storing the digitalized signal;

a digital differentiator connected to said intermediate storage device and differentiating the digitalized signal into a differentiated signal;

a digital multiplier multiplying the digitalized signal with the differentiated signal and a constant to a value corresponding to the power loss of said circuit breaker, said digital multiplier outputting a digital power loss signal; and

a D/A converter connected to said digital multiplier and converting the digital power loss signal into an analog value.

Claim 18 (original). The system according to claim 16, further comprising a controller connected to said digital multiplier, said controller regulating the power loss to the predetermined setpoint, said controller outputting an output signal being a controlled variable supplied as a control signal to said charge pump to generate the control voltage.

Claim 19 (currently amended). The system according to claim 18, wherein said controller ~~(K2)~~ is a two-state controller.

Claim 20 (currently amended). The system according to claim 14, further comprising:

a voltage transmitter receiving a ~~differential~~ difference voltage tapped from between said connection terminals of said circuit breaker and forms an absolute value of the ~~differential~~ difference voltage in reference to a reference potential;

a microcontroller receiving the absolute value of the ~~differential~~ difference voltage, said microcontroller storing a time-variable nominal voltage in a table; and

a controller having an inverting input receiving the absolute value ~~vale~~ of the ~~differential~~ difference voltage and a non-inverting input receiving the time-variable nominal voltage, said controller outputting an output signal being a controlled variable functioning as a control signal supplied to said charge pump to generate the control voltage.